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Impact of Screen Time on Communication in Toddlers: A Parental Awareness Survey

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Abstract

Purpose: To understand the awareness among parents of toddlers on the impact of increased screen time on language and communication development.

Method: A screen time awareness questionnaire was developed. 200 Malayalam speaking parents of toddlers participated in the study. The Screen time awareness questionnaire was sent to the parents via google forms.

Results: 88.5% reported that they were aware of the impact of increased screen time. Among the specified impacts, vision problems stand first and the least reported problem was speech delay. 67% believed that children will start speaking by watching screen. 84% believed that increased screen time leads to attention problem. 93.8% believed that screen time has to be restricted but 56% were not aware of any guidelines set.

Conclusion: Increased screen time has detrimental effects on children's language and other cognitive development including delayed language development, poor social skills, reduced attention, etc. Even when many parents are aware of the impact of increased screen time, misunderstandings persist and are not aware of the guidelines on screen time restriction. With improved awareness, screen time in young children can be limited thereby increasing the parent child interaction and play time which in turn lessens the detrimental effects of screen time on communication development.

Keywords: Screen time, toddlers, Awareness, language and communication development.

Introduction

Screen time is described as the time spent viewing or use of a device with a screen, including, but not limited to television, DVDs, electronic games and computer (Sweetser, Johnson, Ozdowska & Wyeth, 2012; Hinkley, Brown, Carson & Teychenne, 2018). Many parents find it easy to manage their children when they are given a screen to watch. But many parents are not aware of the detrimental effects of increased screen time on their children, including delayed language development. Increased amounts of recreational screen time, without academic purpose is associated with an increased risk of language delays for young children (Kuta, 2017)

Language development and vocabulary growth in young children are directly related to the amount of time parents speak and interact with them. Kuhl (2004) reported that in speech-perception learning and speech-production learning, human-human interactions had a strong influence on a child's language development. Excessive television or screen time use has a huge impact on a child's language development because of reduced parent child interaction (Tanimura, Okuma & Kyoshima, 2007). Family screen time also need to be restricted as family's screen time has a negative impact on parent-child reciprocal interaction (Krupa, Boominathan, Ramanan & Sebastian, 2019). Beyond language development, other negative impacts associated with high media exposure in young children include delays in cognitive and social development. (Barr, Lauricella, Zack, Calvert, Danner et al., 2011). A study reported that children who watched television at least 2 hours per day before the age of 3 years received lower scores on measures of cognitive and academic achievement, including reading and mathematics (Tomopoulos, Dreyer, Berkule, Fierman, Brockmeyer & Mendelsohn, 2010). American Academy of Pediatrics announced recommendations for children's media use which include, avoid use of screen media other than video-chatting for children younger than 18 month and restricting the screen time usage to 1 hour per day for children ages 2 to 5 years. For children ages 6 and older, consistent limits have to be placed on the time spent using media, and the types of media, and make sure media does not replace adequate sleep, physical activity and other behaviors essential to health. According to Landhuis, Poulton, Welch & Hancox (2007) increased television viewing from five to eleven years old was associated with attention problems in adolescence. Recent study suggested that screen-time should be considered a risk factor for attention deficit hyperactivity disorder (ADHD) symptoms. Swing, Gentile, Anderson & Walsh (2010) reported that television viewing time greater than 2-hours per day was associated with increased attention problems among older children. Watching television or playing with computer over 2 hours/day might result in obesity in children due to the lack of activity (Rosiek, Maciejewska, Leksowski,Rosiek-Kryszewska, & Leksowski, , 2015). Studies say that increase in screen time may have a detrimental effect including delayed language development. But such studies in India are scarce. American academy of pediatrics had made recommendations to limit the screen time in children. But no such guidelines are brought up in India. Lack of awareness makes the parents believe about positive impact of screen media on their child's cognitive development because of benefits

advertised by many programs and products. Hence the present study aims to understand the awareness among parents of toddlers on the impact of increased screen time on language and communication development.

Method

The study was carried out in two phases, phase 1 and phase 2. In phase 1 a questionnaire was developed in English language and the questions were chosen based on the known literature on the impacts of screen time in children in relation to language and communication. Total of 12 questions were there which were further divided into three subheadings: general awareness, awareness related to language and communication and awareness on guidelines to restrict screen time. The rating used in the questionnaire was dichotomous (yes/ no). Descriptive answers were expected for two questions, if their answers to those questions were 'yes'. The prepared questionnaire was given to 10 people which included five Speech Language Pathologists, two social workers and three parents of toddlers for content validity. Based on their suggestions, appropriate modifications were made in the questions and only those questions which were rated as agree or strongly agree by more than 75% of the validators were selected for the final questionnaire. The final questionnaire was developed and was uploaded into google forms. The questionnaire began with a disclosure of information pertinent to the study and a vouching of informed consent by the participants. Once their consent is sought, they have to fill the demographic details followed by the 12 questions in the questionnaire. Administration of questionnaire is carried out in phase 2. 200 Malayalam speaking parents of toddlers participated in the study. The Screen time awareness questionnaire was sent to the parents via google forms and respondents were asked to answer the questions given in the google form. The information that is obtained in connection with answers of respondents to the screen time awareness questionnaire were scored as yes or no. The percentage of responses on each question was computed. The responses were analyzed in the form of percentage.

Results

The questionnaire was administered to 200 parents of toddlers residing mainly from the Ernakulam district of Kerala. 65.04% of the respondents were mothers and 36.34% of the respondents were fathers. Table 1 shows the educational qualification of the respondents. The mothers who responded to the questionnaire in the study were in the age range of 22 to 42 years with a mean of 31.27 and with a SD of 6.23 (Table 2). The fathers who responded to the questionnaire were in the age range of 26 to 48 years with a mean of 36.54 and with a SD of 6.57 (Table 2).

Table 1. Educational qualification of the respondents

Educational qualification	Father	Mother
Post-graduates	28.2%	35.64%
Graduates	61.1%	58.79%
Plus-two	5.09%	3.28%
10^{th}	5.5%	2.31%

Table 2. The maximum and minimum age of respondents

	Mother	Father
Minimum age	22	32
Maximum age	27	45
Average	31.27	36.54
SD	6.23	6.57

The results show that parents of toddlers have varied levels of awareness on the impact of screen time in children. 51.4% of the respondents had heard about the term screen time before. 75.5 % of the respondents think that it is easy to manage their child when they are given a screen to watch for. 54.6% of the respondents believed that children eat better when fed while watching the screen. 88.9% reported that they were aware of the impact of increased screen time in children. Among the impacts listed out by the respondents, vision problem stands first and the least reported problem was speech and language delay. The impacts listed out by the respondents and the percentage of response is displayed in Table 3.

Table 3. The impacts listed out by the respondents and the percentage of response.

Impact of increased screen time	Percentage of response
Vision problem	32%
Mental and health issues	23.1%
Attention problem	18.5%
Behavioral issues	13.8%
Brain damage	9.2%
Speech delay	6.9%

32.4% of parents believe that children will start to talk by watching the screen and 62% were aware that increased screen time will lead to delay in speech development. 35.6% of parents believe that the children will learn social skills by watching screen. 77.3% of the respondents were aware that increased screen time will lead to poor social skills. 84.7% believed that increased screen time will lead to attention problems.

94% of parents were aware of the fact that screen time had to be restricted but 56.1 % were not aware of any guidelines set. 58.3% of parents have set restrictions to reduce the screen time. Table 4 shows the screen time restrictions set by the respondents to their children. Among 200 respondents, participated in the study, many of them had set restriction and guidelines in their home. 25 of them responded that they had restricted their toddler's screen time to less than 1 hour and 30 parents stated that they had restricted their toddler's screen time to 1-3 hours daily, 20 parents had set restriction limit to 3 hours. 45 parents had mentioned that they restrict screen time to children but had not specified the duration of screen time allowed to their toddlers. But majority of parents (n=90) responded that they had not set any restriction for using screen.

Table 4. The restriction hour set by the respondents

Restriction hour	No of persons
Less than 1 hours	25
1-3 hours daily	30
Greater than 3 hours	20
Not specified time limit for screen time	45
No restriction	90

Discussion

The study assessed the awareness of parents of toddlers on the impact of screen time on communication in toddlers. Among the 200 respondents, only 51.4 % had heard the term screen time before. Even though the technical term 'screen time' was not familiar, the majority of the respondents (88.9 %) were aware that increased screen time has impacts. Children are growing up in the digital era and the influence of electronic gadgets with screens has increased remarkably. Parenting was also made easy with the coming of gadgets with screens. In the present study also, the preponderance in the percentage of parents agreeing to the same is convincing evidence for the overindulgence of screens in our life. Parents should be able to provide models to their children by restricting their own screen time. Adults including parents, grand-parents and other caregivers can influence children's screen time by restricting their own TV viewing and computer use (Granich , Rosenberg , Knuiman & Timperio ; 2010). Many parents believe that children will eat better when they are fed while watching the screen. But it is proved that higher screen time (including watching TV/videos, playing video games, etc.) can lead to increased energy intake among healthy weight youth (Epstein Roemmich, Paluch & Raynor, 2005; Chaput, Visby & Nyby, 2011). Parents distract their children from the food while eating. This may lead to more intake of energy leading to obesity. The impact of distraction on increasing food intake was highlighted by Wansink (2004). According to Wansink, obese/ or overweight individuals have a greater tendency

for distractibility. Epstein et al (2008) showed that decreasing screen time would lead to a decrease in energy intake in a study among 4-7 year old obese children. So, it is desirable not to feed the children in front of screens. Once it becomes a habit, it is very difficult to change.

Problems related to vision are the most quoted impact by the respondents in the study. Studies say that prolonged use of screen time in children may cause hypermetropia. Excessive screen time and the ensuing poor lifestyle habits may cause low vision in school children in a rapidly developing country (Bener, Al-Mahdi, Vachhani, Al-Nufal, & Ali, 2010).

But the public is not aware of the more severe problems like language delay and attention problems which will have a critical effect on their children. According to American Academy of Pediatrics [AAP], 2016, too much screen time in children will cause language delay and increased risk for obesity, violence and aggression, loss of social skills, attention problems, anxiety and depression, sleep deprivation, vision problems, migraine headaches, repetitive motion syndrome and arthritis. A very small percentage of the participants mentioned speech or language delay and attention problems. On analysis, it was observed that these participants were speech language pathologists or professionals from the medical field. This calls attention to the fact that the general public is not aware of the detrimental effects of increased screen time on communication. Awareness on the same among the public needs to be built.

Many parents believe that children will learn to speak by watching cartoons or videos. But it is not the fact and many studies have proved the same. Very young children, and children younger than 30 months will not learn language from screen exposure (Duch, Fisher, Ensari, & Harrington, 2013). Infants will have difficulty in transferring the information they learnt from media and they do from face-to-face interactions (Bar,2010). 62 % of the parents were aware that increased screen time will lead to language delay which is true. Several studies support the association between excessive screen time and language delays in children under 6 years of age (Chonchaiya & Pruksananonda, 2008; Duch, Fisher, Ensari, & Harrington, 2013; Lin et al., 2015). (Lin, Cherng, Chen, Chen, and Yang, 2015). But in the initial part of the study when the participants were asked to list down the impacts of increased screen time, only less than 10 % of the participants mentioned speech delay. This could be due to the fact that awareness level is high on vision problems associated with screen time compared to language and other cognitive domains and when asked as an open question vision problem would have stroked the parent's mind first. Children are likely to have six times more delay if they began watching television for about two hours per day before the age of one year (Chonchaiya & Pruksananonda, 2008). Another proposed explanation for the increased risk of expressive speech delay is, with increased screen time, exposure to verbal stimulation and play-based interaction with caregivers decreases (Kirkorian Pempek, Murphy, Schmidt & Anderson , 2009; Christakis, Gilkerson, Richards et al; 2009). Background television may also have an effect on children's language development. When

television is on in the background, the quality and quantity of parent's speech decreases. Also parent's mobile phone usage can reduce parent's attention and engagement with the child (Radesky, Silverstein, Zuckerman, & Christakis, 2014). So parents should reduce their and the child's screen time for better parent child interaction thereby promoting the child's language development.

High levels of awareness were shown by the participants on increased screen time leading to poor social skills and attention problems. Studies have proved the association between screen time with social skills and attention problems. Social skills develop through participation in play and other physical activities Sedentary activities such as screen time will reduce the opportunities for interaction with peers and thereby be detrimental to children's opportunities for socialization and to development of healthy social skills (Varni, Magnus, Stucky, Liu, Quinn, Thissen, et al 2013) Increased screen-time in pre-school is associated with worse inattention problems. (Tamana, Ezeugwu, Chikuma, Lefebvre, Azad et al, 2019).

Awareness level is high on the need to restrict screen time in children. But many are not aware of the guidelines set to restrict screen time. American Academy of Pediatrics had come up with the guidelines to restrict screen time. But only a very few parents are aware of it. Due to unawareness, proper restriction on screen time is not done by the parents. A few parents had restricted to less than 30 minutes per day; while another set of a few parents believes watching screen for 2 hours by their toddlers is fine. Even when many parents are aware of the impact of increased screen time, misunderstandings persist and are not aware of the guidelines on screen time restriction. So, a proper awareness on the guidelines to restrict screen time should be done. Awareness can be increased with the help of social media and other electronic media. Pediatric clinics can also take an important role in creating awareness. Also, no such guidelines are set in India. It is high time that such guidelines should be made in India.

There is only limited research in this area in Indian context and to our knowledge this is the first kind of study assessing the parent's awareness on the impact of screen time in toddlers. The participants in our study are restricted to the parents residing at Ernakulam district of Kerala. Expanding the study by including a large sample from all regions of Kerala will give us a better understanding on the awareness of parents on the impact of screen time in toddlers. Probing into the screen time practices of parents and their toddlers would have given better insights regarding the awareness level and how they apply it to their real life. Because, in many families, parents are forced to provide a screen to their children, in spite of their awareness level due to the unavailability of caretakers in the nuclear family system, lack of time due to the work schedules of parents and/ or reduced outdoor space and friends to play with. In the present study, parents' awareness is studied using a questionnaire in google forms. Personal in depth interview would

have provided more information. SLPs and other medical professionals working with the toddler population should come forward with strategies to create awareness among the public.

Conclusion

Increased screen time has detrimental effects on the development of children's language and other cognitive skills. Even when many parents are aware of the impact of increased screen time, misunderstandings persist and are not aware of the guidelines on screen time restriction. With heightened awareness, screen time in young children can be limited thereby increasing the parent child interaction and play time which in turn lessens the detrimental effects of screen time.

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Declaration of interest

The authors report no conflicts of interest. The authors are responsible for the content and writing of the paper.

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Appendix

Screen Time Awareness Questionnaire

	General	
1	Have you heard about the term screen time before?	Yes/ No

2	Do you think it is easy to manage your child when they are given a screen to watch for? For example, screen time help your child to be engaged during your household chores/ helps manage your child better while shopping	Yes/ No
3	Do you think children will eat better only if you feed them while watching the screen?	Yes/ No
4	Are you aware of the impact of increased screen time in children? If yes, please mention.	Yes/ No
	Related to language and communication	
5	Do you think children will start talking by watching screen?	Yes/ No
6	Do you know that increased screen time will lead to delayed speech development?	Yes/ No
7	Do you think children will learn social skills such as sharing, waiting for their turn etc. from screen?	Yes/ No
8	Do you know that children will develop poor socialization skills if they spent too much time in front of screen?	Yes/ No
9	Do you know that increased screen time will lead to attention problems?	
	Guidelines	
10	Do you think you have to restrict screen time for your children?	Yes/ No
11	Are you aware of any guidelines set for screen time in children?	Yes/ No
12	Does your family has set any guidelines or restrictions for screen time in children? If yes, please mention	Yes/ No

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